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ORIGINAL AGRICULTURAL ESSAYS.

REMARKS ON THE "NEW THEORY OF BOTS."

By R. GREEN, Mansfield, Ms.

Many species of insects, by their depredations, force themselves into notice. Not a plant, however noxious, nor shrub, nor tree, nor any animal of the higher classes, but probably has, like Jonah's gourd, an assailant. Such are their numbers and their destruction of property, that anything respecting them, especially whatever tends to lessen their increase or prevent their injurious effects, is interesting.

In the 23d number, vol. 10, of the New England Farmer, I observed a piece called, "New Theory of Bots in Horses." To this, I paid particular attention—but, I saw nothing in it to alter my former opinion, which was founded on observation, experiments, analogy and facts. I did not doubt the good intentions of the author; but, to use his own words, I thought that "prejudice had, in spite of himself, got the better of his judgment." I presumed that probably some, who are unacquainted with the general history of insects and had paid little or no attention to the subject before us, might draw wrong conclusions from the statements there made. But when I saw the remarks of your intelligent correspondent of South Boston, I thought further reply was unnecessary.

Since which, however, I have been desired to make some further observations on the "New Theory," by a friend, Mr Russell, whose request I could not well refuse. The few remarks which shall be made, will be merely an appendix to those made by your aforesaid correspondent.

It is not necessary to go into every particular contained in that paper—such a course would swell this to some considerable length, and be of little use to the public. The whole sum and substance of the "new theory," are simply these positions:—

1. That bots are bred in the horse. This, however, is not exactly said, but I consider it implied, therefore requires a passing notice. 2. That the insects "never kill the horse." That "*the bots never injure him*," but are "*harmless insects*,—doubtless necessary to his health." That they never prey upon the horse while living. 3. That "so soon as the horse dies," they "*knowing* the animal to be dead, endeavor to make their escape, by eating a passage out, or eat a last meal from choice," of course many perforations are made in the stomach.

Now all these positions are either contrary to reason, to analogy, or to fact, or to all of them.

1. That bots are bred in the horse, is contrary to fact. It is well known by naturalists, that insects do not breed in the larva state. It is also well known, that the insects in question, inhabit the horse's stomach *only* in that state; therefore they are not bred in the horse.

2. That the insects "never kill the horse, never injure him," but are "harmless." That they never prey upon the horse "while living." All these are contrary to reason, to analogy, and I believe, to fact. We admit, for a moment, that the bots do not prey upon the horse "while living." But in this case, we contend that they are essentially injurious to him. Can any one think that the plunging of their tentacula or hooks, into the inner and sensible membrane of one of the most important organs of the horse, the stomach, is no injury? Undoubtedly the morbid stimulus, caused by their hooks, is amply sufficient to account for many diseases. Although this morbid stimulus should not directly destroy life, yet it may bring on diseases which end in death. The morbid stimulus of ardent spirit on the human stomach, does not at first destroy, but it introduces a great variety of diseases, which terminate in death.—Comparatively, very few die of intoxication, to the great numbers which are carried out of time, by diseases caused by the morbid stimulus of rum on the stomach. And probably few horses die directly from bots, to the number which die of diseases caused by the morbid stimulus, produced by the action of the insects. I have seen an adult person greatly distressed at the stomach, with constant nausea and frequent attempts to vomit, but nothing was brought up but a little frothy matter—on taking warm water largely, several worms (Ascaris lumbricoides) were washed from the stomach and brought up in the current. On which the vomiting and nausea ceased, and the stomach became immediately tranquil. Will any one deny that this disease was the effects of the morbid stimulus, occasioned by the worms in the stomach? That the worms were the cause, there is no positive evidence; but there is the strongest presumptive evidence—the very best evidence that the case admits; perfectly satisfactory and conclusive. We ought ever to be satisfied with the best evidence that can be in the case.

What shall we say, when a horse moderately used, well fed, with no apparent obstruction in the intestinal canal, and in a season when no external insect can annoy him, loses flesh, fails in courage, now and then coughs, frequently turning his head and with an expressive look views his sides, occasionally biting or snapping as though an insect was stinging him; and thus continues to do, more or less, day after day and week after week, gradually growing worse? I ask again, what shall we say? Shall we call it a cholic? a disease which the author of the "new theory" tells us, kills suddenly. What stronger evidence can be had, that the cause is the morbid stimulus of the bots? It is the best evidence that the case admits. If the horse could be made to vomit, (a thing impossible) and the bots be made to relinquish their hold, the insects might be brought up to ocular demonstration. In man, the placing the hand on the stomach, is an expression of distress in the organ; and the motions of the horse are not less expressive. This case is not a solitary one. The writer never practised, nor studied the veterinary art, but a number of such cases have have fallen under his observation.

But we do contend, that the bots do prey on the stomach and perforate that organ, and frequently in many places, and this while the horse is living. Undoubtedly the insects are carnivorous, and subsist entirely on the horse. What has been said respecting the morbid stimulus, applies here with still greater force. In many cases, if not in all, that I have seen, the destruction of the stomach most evidently appeared to be the work of time. It is naturally impossible that the destruction which is often seen on dissection, could be done by the number of insects found in one hour, nor in one day, nor in one week. The membranes about the perforations, in some cases, had become hard and callous, which could not have happened had the injury been done within twentyfour hours of death, much less after that event had taken place. This alone, I consider, is conclusive. It shows most clearly, that bots prey on the stomach while the animal is living.

Horses are endowed with instinct which directs them to pursue a certain course, without the intervention of reason; or in other words, it directs them to avoid natural evils to which they are exposed. They manifest a great dislike to the insect in its perfect state, especially the smaller kind, although no pain is caused by it. They will often leave their food and run from place to place, to avoid a single bot-fly. The horse which I now own, often when a bot-fly is buzzing about him, becomes so turbulent that I am obliged, when on business, to stop and kill the insect before I can farther proceed—he then is perfectly docile. By this it seems that they, by instinct, are aware of the fatal consequences of the insect. If nature had designed these insects for the health of the horse, we should not expect to see so much antipathy to them, as is exhibited by the animal.

Were bots necessary to the health of the horse, then by analogy, we might conclude that worms are necessary to the health of man; that the borer is necessary for the growth and fertility of our fruit trees; and that the curculio is necessary for the perfection of our most delicate fruits—all of which, it is unnecessary to say, are contrary to reason and fact. Insects are always injurious to every living thing on which they prey.

The presence of bots in a healthy horse, does not prove that they will never injure and eventually kill him; nor does the presence of the borer in a healthy tree, prove that the assailant will never injure and eventually destroy it. Disease and death, in both cases, depend on the amount of injury done and other attending circumstances.

Much more might be said, but I forbear. I will close this head with an extract from a paper, written on this subject, by Mr Clarke, a distinguished naturalist:—"It is fortunate for the animal infested by these insects, that their numbers are limited by the hazards to which they are exposed. Probably a hundred are lost for one that arrives to the perfect state. The eggs often hatch of themselves and the young larva without a nidus, crawls about till it dies; others are washed off by water—when in the mouth of the animal, they have to pass the dreadful ordeal of the teeth and mastication. Such are the contingencies, by which nature has wisely prevented the too great increase of their numbers, and the total destruction of the animals on which they feed."

3. That "so soon as the horse dies," the bots "knowing him to be dead, endeavor to make their escape by eating a passage out," and hence the perforations seen on dissection. This is contrary

to reason and fact. Nature has furnished every species of insect with an instinct, which is an impulsive sagacity or natural inclination to pursue a certain course, and this without variation. For instance, the common wasp constructs her nest with a kind of lint, deposits an egg in each cell, and feeds her young. She cannot build her nest like her neighbor, the mud-wasp, which forms her cells of clay, and deposits her eggs in the midst of half-killed spiders, leaving her brood to take care of themselves. One can never pursue the course of the other; neither can the insect in question pursue any course but that pointed out by instinct. Now, what is this course? It is this: When they wish to leave the animal, they invariably pass by the intestines. Instinct has taught no other way, and they must pursue it or die. Did the insect know the horse to be dead and wish to leave the body, we should find them, on dissection, instead of clinging to the stomach, passing the intestines in crowds. But this is not the fact. The author of the "new theory" observes, that "all insects that live on or near animals, endeavor to make their escape as soon as the animal dies." This may be true with those that are taught by instinct, not to taste of dead matter—but this is not the case with bots. Instinct never teaches a direct road to destruction. For them to leave the stomach in their unprepared state, is death, and of course they cling to it as their only chance for life.

While inhabitants of the stomach, they have nothing to do but to eat and grow. They probably keep themselves gorged. They are not provided with the means necessary to eat hastily and ravenously, nor do they, it is believed, have stated times to riot on the animal. Their work is done leisurely and gradually. They cannot eat more in one hour after death, than they consumed the hour before and probably not so much. But suppose that they have the knowledge of the horse's death, and wish not to "eat," but to gnaw out. They have not the means to accomplish the object. But suppose still further, that they have the means; then, what becomes of the gnawings? none have ever been observed; and who ever knew of any animal or insect that wished to leave its place of residence, and undertake the laborious task of gnawing out, when a passage way was left wide open, through which it might pass with ease?

Lastly. However active the insects may be while the horse is living, and however tenacious of life, they do not well sustain the cold and are found in a torpid state, on inspecting the stomach soon after death. The reason is evident. The heat of the horse's stomach, while living, is said to be 102 degrees of Fahrenheit; and when the heat is much reduced, as in fact it is soon after death, they of course become torpid, as we commonly see them when exposed to the atmosphere. Yet they still have animation enough to hang to the stomach, as their last and only effort. They cannot, probably, know the animal to be dead, only by the diminished temperature of heat, on which they become less active and less disposed to riot in a "last meal."

Without doubt, the insect in question (Oestrus equi) is the *most formidable* natural enemy to the horse. About the year 1800, the insects in their perfect state were in this vicinity, very numerous, and many horses died in consequence of bots. This circumstance led the writer to an investigation of their habits, with a view to discover a remedy for the apparently increasing evil. A number of dissections and experiments were made about that time, in order to complete their history, not having seen any writer on the subject. The effectual means of prevention, as detailed in the result of his inquiries, were put in practice; since which, the insects have beccome comparatively few, and very few horses have died of diseases occasioned by them, in this neighborhood, for several years past.

In the close of this paper, I would remark, that dissections and experiments conducted by those who are not competent for the task, often lead into error. Often something is overlooked by carelessness or want of knowledge, which would have given, had it been noticed, a different result. In the prosecution of dissections and experiments every part ought to be noticed, nothing overlooked, and everything weighed without prejudice or partiality, having nothing in view but the discovery of truth.

Having extended these remarks far beyond what I first intended, I ought to apologize to the reader for detaining him so long. As the subject is of some importance to those who are fond of and keep that useful animal, the horse, I hope to be excused.

CULTURE OF GRAPES AND PLANTS.

Mr Fessenden—Contrary to my expectations, I find your correspondent, "Rusticus," has endeavored to substantiate his former remarks, respecting the "gross inequalities" in the general award of premiums by the Massachusetts Horticultural Society, in a communication of some length; and while I regret that he should have written so much without approaching the point in view, or giving us the least information on the culture of the plants or fruits that are under discussion, I must avail myself of your correspondent's polite phraseology, and apologize for "the room I am likely to occupy in your valuable and useful paper," by my present communication, which will, I fear, be more extensive and contain less useful information, than I could have wished. It is, I am aware, the duty of every correspondent to a periodical of useful knowledge, to study the quality rather than the quantity of his remarks—yet, if I do not possess your correspondent's perspicuity and force of language, I have the same right to your indulgence, in a sincere desire to be useful, and, with his permission, to be just.

Your correspondent regrets that we do not understand the word "forced," alike; as the term admits of but one definition when applied to vegetation, it is merely necessary to explain that application, and to convince him that to the very grapes to which he has referred me to substantiate his argument, the term is not at all applicable.

The grapes, *vitis vinifera*, or what is termed here the European or English grape, is a native of Asia, and in its own climate, is cultivated to great extent. In the vicinity of Candia, where I have understood grapes are grown to as great perfection in the open air, as in any part of the world, the vines break about the first of March; the later kind of grapes, such as the Muscat of Alexandria and Tokay, are ripe the first of August; the Black Hamburgh and Frontignac, of course, three weeks earlier; and the Chasselas or white Sweet-water, three weeks earlier than those. This will make the first grape of the above kinds, ripe about the middle of July. Their general vintage commences about the first of August. Now, according to your correspondent's own calculation, this is the very case with the grapes we grow here under glass. What must have made my previous remarks appear rather contradictory to him, is his evident want of knowledge of the difference between the application of artificial heat to *force* any plant, and merely to *protect it from injury*. On the same grounds that he holds his argument, we may say, we *force* our camellias, geraniums, oranges, or any other tender exotic that requires an artificial climate to bring it to perfection. In England, where the only grapes they cultivate are under glass, or at least, are brought to perfection, *forcing* grapes is considered a very different process from merely supplying by artificial means the deficiency of climate—this is done in their peach-houses, fig-house, and green-houses. If your correspondent, who presumes to answer for the capabilities of the English gardener, had termed in that country, the grape, grown in any of those departments, *forced*, that were not ripened before the first of August, I am afraid his knowledge would suffer in comparison with the ignoramus he so facetiously describes—who "engages to bake, brew, and take care of a horse and gig," &c. The grapes that are forced, are either grown in vineries appropriated to their culture alone, or as is more frequently the case, in pine stoves, as the heat necessary to grow pine-apples in perfection, will force grapes. In these departments, ripe grapes are gathered from March until they come to perfection in the houses above mentioned. These are properly termed *forced*, because they are grown and ripened at a season which their native climate will not admit of. If your correspondent will take an Isabella, or any other native grape that does not ripen in its own native climate until October, plant it in his green-house and ripen the fruit in August, he may then with propriety say, that he *forces* grapes.

In my previous communication, I observed, that I knew from practical experience, that it required more skill and attention to produce good grapes in the open air, in our precarious climate, than under glass. This affirmation your correspondent *knows* also from experience, to be an error, and with his usual polite consideration, regrets that our opinions should be so much at variance; at the same time he supplies us with no further information upon the subject, than that one of the gentlemen who obtained a premium last season, for the specimens of Hamburgh, informed him that he did not bestow any pains upon them, not even to prevent the approach of mildew. I am induced to think that his experience is, in this case, as it certainly is in many others on the same subject, merely imaginary. I have grown grapes under glass in America for nine years, and have never missed ripening a crop without any difficulty, nor have I ever seen a failure in any green-house in the vicinity, to ripen a reasonable crop of fruit, if set upon the vines, unless by some accident and then only in one case. It is true, I have seen too much fruit left on the vines; the result was, its not being so large or high-flavored; still it ripened. I have cultivated the vine four years, in the open air, in a bearing state—paid all the attention to it I possibly could and used all the skill I was master of, still the best season I was not able to ripen more than two thirds of a crop, and one season scarcely any; yet every spring I have had an abundant show of fruit, and this I know to have

been the case generally, I may almost say universally, where they have been cultivated to any extent in the neighborhood of Boston. I beg to remark, this observation does not include grapes grown in the city or in small and completely sheltered gardens. I could produce a great many more facts from practical observation, but I think that quite enough has been said to convince every horticulturist, that my former remarks were correct, notwithstanding the variance of opinion which your correspondent was pleased so politely to regret.

His arguments to substantiate his remarks upon the premiums for flowers, are equally chimerical, and evince a greater paucity of knowledge than he appears to possess, or is willing to shew, on the subject of grapes. He observes that I "have told him what every body knows, viz. how to pot and water chrysanthemums, but have said very little on the particular point where we differ." It may be recollected, that *he* spoke of the time and preparation of compost. I believe in his former communication he asks, if the compost for growing chrysanthemums required to be mixed, at least, a year? and replies, with emphatic decision, "certainly not." I think every grower must have felt very much obliged to him for the information. But further—he says, "now any one can have them in great perfection with no other care and trouble, than to put them in good loam and vegetable mould." I would ask him, if he possesses the art of decomposing vegetable matter, in one minute, to a proper consistency for the growth of plants? as he says, that "he never thinks of preparing the compost until the moment the chrysanthemums are ready to pot off." If he has, I believe that cultivators generally, would be exceedingly gratified for the information; for my part, it takes me nearly a year. The watering I recommended, he says is unnecessary, twice or thrice a week being sufficient, unless you want them as big as barberry-bushes. This remark betrays his perfect ignorance of the cultivation of this plant, for frequent watering obviates the very fault which he asserts it causes. When the plants are plunged, they are in very small pots and will in a short time fill them with roots, which, if they are well watered, will confine themselves to the pots and cause the plant to grow dwarf, and cover itself with foliage; but whenever they want moisture, they will strike their roots through, into the soil they are plunged in, run up tall; and the consequence is, when they are repotted, these roots are from necessity broken off—the plant wilts, loses its leaves; and this or similar causes is the reason why we see so many tall naked chrysanthemums, with a few half-grown flowers on the top. My previous remarks on the growth of chrysanthemums and tulips, arose from my own practice without reference to any author. Maddock, I have never read; but Hogg has not mentioned the culture of chrysanthemums at all. Speaking of the tulip, he says, "It was introduced into England in the year 1577, where it has been found to increase freely and grow in the open ground, without any extraordinary degree of care;" and this is undoubtedly the reason that the tulip has possessed more of the attention of early writers, than the chrysanthemum sinensis, which was not brought into England until the year 1790; and then only the "old purple"—making a difference of two centuries in their respective claims on the student. I also know that in 1821, there were not more than ten varieties that had flowered in England, and those in the hands of a few nursery men in the vicinity of London. A little before this time, the London Horticultural Society became interested not only in the cultivation, but in the introduction of new varieties. Their success was so great that in 1826, they had fortyeight varieties in flower in their own garden; since that time I have had no means of obtaining an accurate account of the new varieties, but I have heard of five. If your correspondent will be at the trouble to examine the horticultural transactions, he will find that they spared no pains or expense in introducing it into general culture; and he will then, perhaps, condescend to acknowledge that it has been estimated to deserve the same approbation, and that it has been as much and as ably written upon, as the tulip, their different ages considered.

He also hopes, I have had sufficient observation of animal life, to know that what is life to one is death to another, and that the same may be said of vegetables and plants—for what is life to most plants, is deadly poison to bulbs. This remark will convince the reader that Mr Rusticus is no great cultivator or that his experience in the art is miserably limited, for with the exception of a very few natural orders of plants, such as the Apuntiaceæ and Ericeæ, whose native soil is on the tops of rocks, in dry sand or in heaths, or as the Nymphæceæ tribes or other aquatics that grow in mud, immersed in water, there are few other plants, but the same soil that grows tulips, hyacinths, and other bulbs will also grow. It is true that some plants want more of one particular part of soil than others, to grow them well; for instance, a China rose wants a richer soil than an amaryllis; and a geranium and chrysanthemum want a more retentive soil than a tulip; but still the soil is composed of the same substances, only differently distributed. Rusticus also asks how many have tried to cultivate tulips, and how few have succeeded, whilst almost every individual in the practice of rearing flowers, has chrysanthemums. He could not surely have visited the horticultural exhibitions last season or read the report of the committee, or he would have found the exact reverse to be the case. The Society's glasses were filled every exhibition day, during the season of tulips, and there were several competitors for premiums; and if I mistake not, there was only one person showed for the prize on chrysanthemums. Now, judging from this, if he says every lover of flowers has chrysanthemums, it must be imagined that they either grow them so badly that they are ashamed to exhibit them, or that they would rather show tulips for three dollars than chrysanthemums for five. Again, he asks, how many ranunculuses, are purchased every year and come to nought? The reason is obvious to every person acquainted with plants—the "many thousands," he mentions, are no doubt bought at auction; sent out from Holland to be disposed of in that way—they are generally the weakest and poorest roots left in the florist's hands, and after having supplied his orders, he sends the refuse to bring any price in foreign markets, they can command. He takes no more trouble in packing them, than merely perhaps to prevent them from actually rotting on the passage. Many of them decay, and a dampness spreads from those over the whole case, so much as frequently to rot the paper in which they are packed. The ranunculuses being the smallest roots and very tender, are the first killed. This is the cause that so very few ever start after planting, and what Rusticus terms the epidemic disease to the stronger bulbs, tulips, narcissus, &c, is nine times out of ten contracted in crossing the Atlantic and not to any cause he adduces. I think all florists ought to be governed by the information he received, through the medium of his friend from New York, as to planting the ranunculuses with the "claws upward." He is really taking us back into the 16th century at once, when conservatories were heated by making large holes in the ground and filling them with peat or ashes, and when the soil in Holland to grow a bulb, was kept a profound secret. He hopes, in conclusion, that he has said enough to prove that chrysanthemums, instead of being ten times the trouble of tulips they are a hundred the reverse. Now I almost fancy that my faculties are somewhat more obtuse than formerly, for I cannot perceive that he has shown any proof that either of them are difficult or troublesome to grow, unless we are to rely upon his mere assertion, that "everybody has succeeded in chrysanthemums, and nobody in tulips, hyacinths, &c.

I will point out the compost that I have used for the above plants. The original soil of my tulip bed, is rather a strong and rich loam; to every square yard I applied a good large wheel-barrow full of well rotted leaf mould; half a barrow full of well rotted manure, and half a barrow full of coarse sand. This must be well mixed, eighteen inches or two feet deep, by turning it two or three times before the bulbs are planted. In planting, I take off the soil all over the bed four inches deep, make it perfectly level, mark the distance of the bulbs from each other, (the rows eight inches apart and seven inches in the row.) I then put a small handful of sand on the place where I intend each bulb to stand; place on it the root, the bulb in an erect position, and cover it with another handful of sand. I then replace the soil carefully so as not to move the roots, and finish off the bed perfectly level. Where the soil is light and not very rich, I would add half a barrow full of rotted manure, and not put any sand, only round the bulb. This is necessary in any soil to keep them dry in winter. For hyacinths, the compost will be better made lighter by adding more sand, but must be equally rich. I plant them the same depth, the distance eight inches apart each way, and in the same manner. I manage them, after they are planted, in the same way as recommended for tulips in my former communication. Ranunculuses, I have never grown in America, but the same preparation for tulips will grow them well. The method to plant them is, after making your bed perfectly level, to draw drills six inches apart and exactly two inches deep; plant the roots, claws downward, in the drill four or five inches apart; cover them with a little sand, like the others, and level your bed neatly. It is necessary to protect them during winter, with a hot bed frame, from the severe cold, and look at them occasionally to see that they do not start and draw up weak. Give them air in fine weather; in spring move away the frame, and when they are coming into flower, shade them from the hot sun and supply them plentifully with water—care must be taken not to wet the flowers, or it will immediately spoil their colors. One thing I particularly recommend, viz. to be very cautious and certain that the manure you apply to all bulbs,

is completely rotten. If this cannot be obtained and your ground is poor, bury your manure so that it do not come in contact with the bulbs, otherwise it will be sure to destroy the colors of the flowers. If Mr Rusticus or any other person, will procure good healthy roots (those from auction I would not recommend to any one,) and follow the above brief directions, I am confident he will be successful and be convinced that there is no such great art in growing any of the above bulbs, as he would make us believe. The compost in which I grow my chrysanthemums is, four wheel-barrows full of rich loam from rotten sods; one barrow full of well rotted manure; one barrow full of vegetable mould, and half a barrow full of sand—well mixed. If it lay a year after mixing it is the better. Destroy the weeds by frequent turning.

Your correspondent observes, with unusual modesty, that he has not the vanity to think his judgment superior to that of others, but will not give up to me. Allow me to reply, that I never was ambitious of such a sacrifice on my account, and would take very little trouble to obtain it—bearing in mind the good old adage, that "one man might lead a horse to water," &c. He does not seem to recollect any flower being in blossom, with the exception of a few lilacs, at the same time with tulips; he censures the weakness of my memory and then makes a further exception of one of the varieties I mentioned. As the beauty of different flowers must be judged according to taste, in which few horticulturists agree, and on which I have known endless and most unprofitable disputes. I believe the respective merits of tulips and chrysanthemums will find advocates enough, without Mr Rusticus or myself being over zealous in their behalf. I acknowledge his good nature in being glad that I am satisfied to compete for small premiums. "If I cultivate to perfection, it is *all* he wishes." Think of that, Mr Editor—with such an end in view, what would I not undertake? I can at present only wish that his prayer for the blessing of patience, may be granted, for I am confident he can never be a successful cultivator without it; and to his regret that I should so misinterpret his language, as meaning to cast any censure on the gentlemen forming the the committee, I reply, that I am not the only one, by many, who has labored under the same impression. After adverting to the ignorance in which English judges are kept, from not knowing the owners of flowers offered for premiums, he says, "and thus it is that the poor and humble cottager is often the successful competitor." Such an assertion can bear but one inference, and Mr Rusticus is remarkably awkward in his attempt to conceal it. His compliment to Mr Loudon is, of course, deserved; but his admiration in this case, might have been usefully coupled with the recollection that the practical correspondents of the Gardeners' Magazine, neither advance suggestions nor endeavor to substantiate them, without giving their practical experience.

In conclusion, Mr Editor, though I have no objection to exchange opinions on the culture of any plant or fruit with which I may be conversant, with any person, I desire no further controversy with a writer whose only argument is contradiction, without affording us the least knowledge of any kind, but that he thinks himself wiser than other folks. I am, yours respectfully,

A PRACTICAL HORTICULTURIST.

Charlestown, March 5, 1832.

HEATING HOT-HOUSES AND GREEN-HOUSES BY HOT WATER.

Although the subject of heating hot-houses, &c, by hot water, may not, to a superficial view, seem to be of very extensive practical utility, yet an investigation of the principles of this branch of economy of heat, may lead to results of much importance, which the inquirer could not have anticipated. We hope, therefore, that our readers will excuse us for dwelling somewhat in detail, on a topic, apparently in some degree foreign from the great interests to which our paper is devoted.

Those green-houses, and other repositories of untimely and exotic vegetation, in Europe called forcing-houses, in which fire was made a substitute for heat of climate, had been for two centuries, heated *solely* by brick flues; that is, by the heat given out by the blaze and smoke of burning fuel. That this mode had been entirely adequate to its end is proved by the *fact*, that at Kew, Paris, Liverpool, Leyden, Berlin, St Petersburg &c, they have been able to produce grapes in winter; pine-apples in spring; and to bring into flower the rarest West and East India plants, and even to ripen their fruits to great perfection.

When, however, the management of steam became familiar to British mechanics, they applied the surplus steam not required for their machinery, to the heating of their work-shops. This soon led to the employment of steam in heating every description of forcing-houses, hot-houses, green-houses, conservatories, graperies, and pineries.—They were the subjects of great praise, but, nevertheless, a great proportion of the *practical* gardeners revolted at them; not, as we shall endeavor to show, from well grounded objections to the use of steam, but from the *abuse* of it; because, instead of using it as an *auxiliary* power, the projectors, vain of their discovery, insisted on its being an *universal remedy.* It was like a quack medicine, able to cure, equally well, all diseases, however opposite their character.

The Hon. J. Lowell has, in our opinion, discovered and put into useful operation, an important improvement on the European modes of heating hot-houses, &c. After having derived much pleasure from the inspection of this improvement, we requested and prevailed on Mr Lowell to furnish us with the following notices, of the origin and progress of his mode of heating hot-houses, &c.

"I imported the horticultural transactions of Europe, and found the parties divided with regard to the comparative value of heating by *steam* and by *smoke* flues. I said to my friends, these gentlemen are so angry with each other, that they do not perceive that the two modes of heating green-houses, &c, may be very easily *combined.* Why should the advocates for smoke flues, be so obstinate as to reject the prodigious power of steam? And why should the new advocates for steam, reject the heating effects of the smoke and the flame, which must be at least equal to all the heat which they can force the ignited fuel to part with to the kettles?

"I resolved to depart from the practice of heating by steam only. I placed my boiler *within* my house, instead of following their example. This alteration alone was a saving of one ton of coal. I then resolved to *continue my smoke flues in addition to my steam pipes.* I soon perceived that I had gained most important benefits. I found that of one hundred and twenty days of winter, there were not more than thirty in the whole (one quarter part) in which it was necessary or even useful to raise *any steam* whatever. Here let me stop to explain this. Steam will not rise to heat a steam pipe, till your water in the boiler is heated to 212 degrees. But before that happens, your brick flue has been so heated as to raise the thermometer in your house, to 60 degrees at least. Now as this degree of heat is not only sufficient for your plants, but a *better temperature* for their health than any other, being about the average temperature of summer, *all artificial heat above that point is positively hurtful.* The practical gardener will comprehend me, when I say that it forces plants *prematurely* and they are weakly and sickly.

"Such was the state of our experience on this subject, when we were told that *hot water pipes* and *reservoirs* were adapted to *cure* all our evils, and produce, not only economy of fuel but of labor. I listened with the deepest interest to the accounts of this *new* discovery. The fact, unquestionable in itself, that hot water parts with its heat more slowly than any other substance, struck my imagination. I resolved at once to try the hot water system; but, instructed by experience, I resolved that if I adopted it, I would not give up the smoke flue, which *I knew* had given out, at least, as much heat as either steam pipes or hot water pipes could do—or in other and plainer language, in using either hot water or steam pipes exclusively, you gave up one half of all your power—you reduced at once one pound of coal to half a pound.

"Having made these replies to your inquiries, I beg leave to ask you to republish the observations of Mr Paxton, principal gardener to the Duke of Devonshire at Chatsworth. His remarks were made, in reply to strictures of Mr Loudon, as to his, Mr Paxton's, refusal to adopt the *hot water* system. Of Mr Paxton's abilities, Loudon himself speaks in high terms. The public will judge of the comparative capacity of the two parties to decide, when they learn that Mr Loudon is an architect and Mr Paxton, whom he praises, has the care of nearly *thirty* green-houses, hot-houses and pineries, that he is the practical manager of one of the most extensive establishments in Great Britain. Mr Paxton urges the same objection which I have urged to hot water apparatus, when used exclusively, that it is a wasteful expense as to green-houses and graperies, because there is not more than twenty or thirty nights in the year, when you are obliged to get up your hot water pipes to their maximum.

"I believe fully, that if our improvemennt should ever be admitted into Great Britain, it would supersede the present modes of heating. Its essential superiority consists in this: the upper pipes without flanges, are laid along the top of the smoke flue, and the lower are returned in contact with the same flue. Thus the heating of the water pipes is very essentially accelerated, and their cooling as essentially retarded. At Roxbury, on the famous 27th of January last, the thermometer in my hot-house did not fall below 56; and at Gardiner, Me. in a very large green-house heated on the same principle, on the same day, the thermometer within the house stood at 39°, while without it sunk to the degree of 20 below 0."

"P. S. I ought not to conclude these remarks, without adding that your apparatus for heating rooms, embracing as it does, the principles

necessary to give a quick and durable heat, is, I think, of great value.

T. G. Fessenden, Esq."

The observations of Mr Paxton, gardener to the Duke of Devonshire, noticed above, were as follows:

"*Question.* How do you like hot water in comparison to fire flues?"

"*Answer.* So far as my experience has led me to draw any conclusion, I will answer your question. When hot water was first noticed in the horticultural transactions, I was almost in raptures with the idea, and as soon as possible I sat about heating those two pits you now see with it, and although it was thought the pipes then put in, (a double return,) would be more than sufficient for the purpose of heating the pits, independent of two large cisterns full of hot water, to my astonishment, on the approach of severe weather we had considerable difficulty to keep out the frost; and in the severe storm, two years since, our pine plants were so much injured, that they nearly all started prematurely into fruit in the spring. You are aware that water evaporates into steam at 212 degrees Fah. and, consequently, the pipes cannot be heated to a greater degree. The difficulty in hot water is, that while in a severe frosty night, the external atmosphere is continually lowering, you cannot keep increasing the hot water to counteract its effects, without putting up nearly double the quantity of pipes that would be necessary under ordinary circumstances; when, with a well constructed flue, you could advance to any degree that might be required. Our houses are so contrived that we have full command of the internal air, without in the least distressing the flues in the most severe weather; and my foreman has repeatedly told me, that the only fire requiring attention more than once in the evening, is that attached to the hot water pit. I have offered him a man to assist him, but he has always refused, saying, he had no cause to visit the fires more than once in the evening, except in very severe weather. There are flues in the garden, erected before I came to Chatsworth, that almost burn one end of the house while the other is nearly cold; but these I do not now use for early forcing, and therefore have not altered them. All the flues I have built, give out heat in so uniform a manner, that there is no difference between one end of the house and the other; and by the plan of having an open canal of water at the front of the fires, to give out moisture according to the heat required, not the greatest action of the flue can in the least injure vegetation; being a self actor, it evaporates more or less as the decrease or increase of the fire becomes necessary. And on entering the house, after a severe frosty night, not the slightest unpleasantness is perceptible. This canal is made of block tin, and when properly painted will last a great number of years."

"*Q.* Do you mean then to discontinue hot water for forcing?"

"*A.* By no means; I have some alterations at present going on for improving it if possible; all I want is for it to stand on its own merits, and for all persons who give their opinions, to speak from experience."

We will close this article with a few brief remarks of our own. More or less heat is always expended in and about a fireplace, during the combustion of fuel. Of course it must be good economy, as *a general rule*, to construct a fireplace *within* the apartment to be heated. A smoke flue is often pervaded by flame, as well as by smoke and hot air, for many feet from the furnace, and may be considered as *a continuation of the fireplace, adding much to its power of heating.* A hot water pipe placed on or in contact with a flue, receives heat from the latter and distributes it more equably, than could be done by the flue alone. This arrangement, together with a reservoir somewhat larger than the boiler, to make up in quantity what is wanted in temperature, may serve to equalize, or nearly so, the warmth of both ends of the house.

The boiler, flue, pipes and reservoir, are receivers, carriers, distributors and depositories of heat, and are all useful when judiciously employed.

There are three things to be desired in heating hot-houses, &c. A *quick heat*, which may be gained from brick flues or steam pipes. A *durable heat*, furnished by hot water pipes and reservoirs. And a *moist heat*, obtained, as mentioned above by Mr Paxton, by "open canals," or by any kind of open metallic vessels containing water and placed in a warm situation, or by perforated steam pipes and other modes now in use.

Mr Lowell's method of combining a quick with a durable heat, appears to us to be a great improvement, which might be advantageously used for many other purposes, besides heating horticultural edifices. Its value has been ascertained by the infallible test of experiment; and we think it will be embraced with avidity by European as well as American horticulturists.

We believe that the apparatus for heating by hot water, constructed by S. G. Perkins, Esq. and Col. T. H. Perkins, heretofore described in our paper, are perfectly in accordance with the latest English improvements in that branch of economy, and think their enterprize and skill deserve high commendation. Mr Lowell's apparatus, however, appears to us to be an improvement on the greatest advances of which we have seen any notices, in Great Britain or the United States.

CULTURE OF SILK.

Mr Fessenden—I have seen the article in your last paper, of an unknown correspondent, calling on me to start associations of the State and Counties for the culture of silk, and offering assistance. In regard to this business, I am willing to do all that I can with safety, and have already proposed my views to one of the committee of agriculture in the House of Representatives. What seems to be most wanting at present, to encourage our farmers to raise silk, is that they should be sure of some fixed price for the cocoons, if it were not more than 25 cts. per lb. They would then go on with confidence, and set out mulberry trees and raise silk worms, knowing that if they could do no better with the cocoons themselves, they could at least sell them for that price. If the State Legislature or some association, would encourage a suitable person to give some standard price, for all the cocoons that were raised in Massachusetts for five years to come, there is no doubt but that an abundance of them would be raised, at the end of that time. The reeling is discouraging at first and is attended with some expense and waste; and without some aid, as above mentioned, from Government or an association, I fear that few individuals, if any, can be found to undertake it extensively. My opinion is, that the Governor, or the agent of an association, should have power to contract with some responsible person to purchase all the cocoons, raised in this commonwealth, which might be offered to him for sale, and reel and manufacture them, or sell the raw silk at his own risk; and that a responsible person might be found to do this, for five years, at the rate of $1000 per year, I have no doubt. This certainly would be a trifling sum for the State to appropriate to so useful and important a business, especially when it is considered what vast sums have been spent in other countries, to bring forward and foster this branch of domestic industry. I believe the manufacturing will go on without encouragement, but that will not help the agricultural interest so much, while it is confined to the *foreign* raw silk.

Dedham, March 5, 1832. J. H. COBB.

GRAFTING FRUIT TREES.

Mr Editor—I strongly suspect that it is not generally known that a great variety of trees, even the walnut or shag-bark, may be successfully grafted. The best kinds of the the plum tree will succeed well on the common plum stock. And although the pear will grow grafted upon the thorn, and the quince upon the pear, yet as a general rule, we think that they will flourish best upon their kindred stocks. The peach is an exception. It is the general practice in England, to graft the peach upon the plum stock; such ought to be the practice here—good reasons may be assigned. The plum tree is more hardy than the peach, will live twenty or thirty years, and is not so liable to be destroyed by worms at the root.—It is said that peach trees grafted upon plum stocks, will flourish thirty years, and are not so easily affected by our severe winters. If the latter remark be correct, and for the other reasons assigned, I advise all farmers disposed to cultivate this delicious fruit, to insert the peach scion upon the plum stock; some prefer budding—the experiment, should it fail, would cost but little. Peach trees ought not to be pruned at all, after the tree is well formed, or suffered to grow very high. Ashes round the roots are useful as manure, and to guard against worms. In this country I believe fruit trees generally are supposed to grow too high; they are more liable to be injured by severe and cold winds. The tops should be bent down and confined, or cut off, while the trees are young. This, I understand, is the common practice in the fruit gardens of England.

WILLIAM CLAGGETT.

Portsmouth, N. H. March, 1832.

BLACK CURRANT WINE.

The first knowledge I had of the virtues of the black currant, was from a paper written by the Rev. M. Cutler and read before the "American Academy of Arts and Sciences," and by them published in their first volume of "Memoirs," A. D. 1785. In that paper, a jelly or rob was recommended for sore throat, &c. I thought that if the currant possessed so many virtues, that the wine might be useful. Accordingly I made it, on a small scale, and found it exceeded my most sanguine expectations.

The shrub is as easily cultivated as any other currant with which I am acquainted; but the wine is not so easily made as other currant wines, on account of its pulp.

The currants should be fully ripe and collected

in dry weather, freed from leaves, webs of insects, and decayed or defective fruit. To a gallon of currants add a gallon of water; break the currants and press out the liquid by strong pressure, but in such a manner as to detain as much pulp as possible. To every gallon of liquid thus obtained, add three pounds of good clean sugar; one fourth of an ounce of alum, pulverized; and two gills of good brandy. Let the whole be well incorporated together, put into a clean vessel and placed in a cool situation, before the fermentation commences. Place the bung loosely in for a few days and then tighten it, leaving at its side a very small vent, which in a little time more may be stopped. All the utensils used in the process should be perfectly sweet and clean, and the business be carried on with expedition. The alum prevents a too rapid fermentation; it should be added in the beginning of the process and completely incorporated with the liquor, that its peculiar astringency may be lost in the compound, which is to be made by the vinous fermentation.

The above process, I communicated to Mr Otis Pettee of Newton. He has made the wine according to the rule above detailed. His wine, I understand, has found its way into the market, is much approved, and thought to be inferior to none. R. GREEN.

Mansfield, Feb. 10, 1832.

MANURE.

Few farmers are aware of how much of the strength of manure is lost and carried off, by rains, from their barn yards; especially when situated on the road and descending towards it, as is often seen, and a stream the color of strong ley or brown stout, constantly running from it. My yard is about 60 by 40 feet, and dishing towards the centre—the cattle stalls under the hovel on one side, with a clay bottom, also descend without any obstruction to the same point. There is a wooden tank sunk at one end, which will contain eight puncheons, but no drainings can run into the tank, until it is over eight inches deep in the centre; and yet although the litter is generally a foot thick, such is the quantity of moisture which accumulates from the 1st of March to the 1st of July, that one rainy day that will fill a puncheon which receives a quarter of the rain which falls on the roof of a house 40 by 40 feet, fills the tank after saturating the litter. How much then would be lost from a level yard or from one descending toward the street? and how much the dung must be deteriorated, after having such a quantity of its strength carried off by every rain. This liquid is drawn up into a puncheon, mounted on a horse cart, thence conducted into a sprinkler, such as is used for watering the streets of cities, and driven over my grass lands nearest home until the grass is half knee high, after which it is drawn out of the cask in buckets and thrown on the compost heap, which is generally in the highest part of the field which is intended to be next ploughed or broke up. My hired man can, when he chooses, carry out and sprinkle the contents of the tank in half a day.

Perhaps some of your readers would like to know the dimensions, materials, and expense of the tank. Material, the heavy southern 1¼ inch pitch pine, joined by a straight edge as if to be glued. Dimensions, 6 feet long, 4 wide, and 4 deep. I think this material will last as long under ground as brick; it is covered with thick plank and we drive loaded carts over it. Whole expense, about thirteen dollars. It ought, however, to be larger, as it often runs over before we have an opportunity to carry it out. I think it has been perfectly tight from the first, as I have seen i stand full, within an inch, for many days.

An Irishman who lived with me, said he had lived in the neighborhood of a farmer who had a large one, and used to throw in every dead animal he could procure, and would run it over land drilled for potatoes, with as many tap holes in the cask, as there were drill rows under it. B.

Bridgeport, Feb. 6, 1832.

INJURY TO FRUIT TREES.

Thomas G. Fessenden, Esq.

Dear Sir—As I am the first to announce the destructive effects of the past winter, upon every species of fruit trees, I am induced to hope that my suffering has not been extensively shared in other parts of the country. Having been applied to by several friends in New Hampshire, Connecticut, Maine and New York, for scions of the new varieties of pears, I was surprised and distressed to find that the shoots of last year were pretty uniformly destroyed. This led me to further examination, and I am grieved to state that, with me, the peach, the cherry, the pear, and even the apple, have suffered more severely, than within my memory, a period of fortyseven years, since my attention to these subjects. The whole of the last year's growth is destroyed, so far as the examination of fifty young and old trees in every variety of situation, enables me to judge. My friends who have requested grafts from me, will consider this as a general reply to all their requests. I have not been able to find one pear scion which I could send to a friend. Nor is this the worst part of the case. The injury to the *trees* will be far greater than if the scions had been removed by the knife. They will become diseased and one can scarcely tell where this disease will terminate. All my hope is, that I have been more severely visited than others. It will be time enough after we have settled the facts, to discuss the cause. I have no doubt that it is not to be attributed to the cold of the late winter, but I should rather look to the extraordinary and unnatural heat of the last summer, which enabled gentlemen to ripen the Black Hamburg grape, and even the Muscat, on open trellises.

I said to a friend, who showed me some of those tender grapes nearly ripened in the open ground, last year, "My friend, I have a deep concern at your success, because, if you live thirty years longer, you will *never see the same success.* It is a *misfortune* to you."

The sap continued up and not inspissated till the 30th of November. The severe, unusually premature severity of December, burst the vessels of the plants, filled as they were with a watery fluid. Such is my conjecture, but what are conjectures worth? The alarming facts are the most important to us. May these facts be limited in their extent. JOHN LOWELL.

Boston, March 9, 1832.

☞We are fearful that the calamity described above, has been very extensive as well as destructive, within the limits of its visitations. We have heard from Maine and many parts of New England, and are told that many if not most of the fruit trees have been seriously injured, if not utterly ruined.—*Editor of N. E. Farmer.*

DAMAGE TO FRUIT TREES.

Mr Fessenden—I think it very desirable for the public to ascertain, from New Jersey and the middle States, whether the effects of the past winter and autumn, have been so severe on fruit trees there as in this section of the Union.

The damage done to the pear, cherry, peach and apple, (more particularly young trees) is inconceivable, in every part of New England, as far as can be learned. Many young trees that appear to be green and healthy at first sight, are found, on removing the bark with a penknife, to be black and dead. I lately examined a young orchard of forty trees, every one of which was injured more or less, many utterly ruined, with the exception of two or three *native* cherry trees, that had never been budded. It is desirable to know whether *native* fruits in general have escaped, more than foreign varieties. An intelligent farmer in a town in Middlesex county, where thousands of barrels of winter apples are frequently raised in a season, informed me, he feared they should not produce a barrel this year, nor a pint of cherries. As it will be a long time before the trees can recover from this shock, we may calculate on a great scarcity of fruit, for ten years to come. I hope your correspondents in various parts of the United States, will furnish information of the state of orchards in their vicinity, through the New England Farmer. A. B.

Salem, March 12, 1832.

LARGE OX.

Mr Thomas T. Farnsworth of Worcester, Mass. lately slaughtered an Ox of the Durham short horn breed, originally owned by his Excellency Gov. Lincoln, which exhibited unequivocal testimony of the value of that race of animals. His weight was as follows:—

Alive,	2525;
Quarters,	370;
"	370;
"	380;
"	375;
Hide,	150;
Tallow,	118;
Total,	1763.

The Ox was five years old, only. He had no meal, except five bushels last spring, and twenty bushels of cob and corn meal since the commencement of autumn.

Barking the stems of Fruit Trees.—A writer for the Gardeners' Magazine says, in substance, that his gardener in Holland, at the winter pruning, given in that country in February, cuts off with his common pruning-knife all the outer bark, down to the liber, of his apple and pear trees, and vines, above eight or ten years old; not so deeply, however, with the young as with the old trees. This man's practice is said to have been always successful in producing larger and better flavored fruit, than can be obtained without that process.

To Correspondents. We are obliged to defer this week, the Proceedings of the last stated meeting of the Massachusetts Horticultural Society, and many other favors.

HAMPDEN HORTICULTURAL SOCIETY.

A meeting of about forty gentlemen was held at Springfield, Mass. last week, in which suitable arrangements were made for organizing a Horticultural Society, to embrace members from any part of the County of Hampden. We hope the proposed institution will prove as flourishing as its object is laudable. The following gentlemen were chosen officers:—

ROBERT EMERY, President.
CHARLES STERNS, Vice President.
HENRY STERNS, Recording Secretary.
W. B. O. PEABODY, Corresponding Secretary.
ELISHA EDWARDS, Treasurer.

These, with the following named gentlemen, constitute the Executive Committee, to examine horticultural productions, award premiums, &c.

SAMUEL OSGOOD; THOMAS BOND;
SOLOMON HATCH; JAMES CHAPMAN.

Notice.

A collection of Seeds and Cuttings will be distributed at the Hall of the Mass. Hort. Society on Saturday 17th inst. March 14

Grape Vines.

THE subscriber offers for sale, at his garden in Dorchester, a few cuttings of the black and white "Moscatel" Grape Vines, just received by the brig Cora from Cadiz, procured for him by the Consul of the United States, resident there. He writes, "I obtained these cuttings from vines on which I have seen clusters of grapes, weighing as much as Twentysix pounds."—They contain several jeints, and will be sold at 50 cents each.

Also, some very thrifty vines of the Ferrol Grape, a splendid black fruit, recently imported.

—ALSO—

Isabella;	Barcelona;
Catawba;	Blands;
Constantia;	Black Cape;
Black Hamburgh;	

3 varieties of valuable fruits, obtained from Xeres in Spain, and many other choice kinds.

Orders by Mail addressed to the subscriber, or personal application at his office, No. 7½ Congress street, for any quantity of vines from one to one hundred, will meet with prompt attention. Z. COOK, JR.

March 12, 1832. 5t

Durham short horn Stock.

FOR Sale, a few very superior half blood Durham short horn Cows, sired by *Admiral*,—who was presented to the Massachusetts Society forthe promotion of Agriculture, by Admiral Sir Isaac Coffin,—these Cows are all warranted in calf by *Young Comet*, a full blood Durham short horn Bull, out of the imported Cow *Annabella*, presented by Sir Isaac to the same Society. *Annabella* has repeatedly given fortyeight pounds of rich Milk per day, from grass feed only. For particulars, inquire of Mr J. B. Russell, at the Agricultural Seed store, Boston, or at the Farm of E. Hersy Derby, Esq. Salem, where the Stock can be seen. Salem, March, 1832.

Farm for Sale.

A first rate Farm, laying in Dorchester, six miles from the old State House, containing 90 acres; consisting of mowing, pasture, orchard and wood; a few acres of it is salt marsh, situated at South Boston.

There is a handsome two story house, in good repair, finely situated on a hill, having a very commanding prospect of the country, handsomely finished; a large barn with an excellont cellar under it for vegetables, shed room, piggery, &c, &c; a farm house, nearly new, and ice house—the whole combining as pleasant a situation for a gentleman, as can be found in the vicinity; the land is in good heart, and would make an excellent milk farm; 60 tons of hay was cut from it last season, and 10 cows kept on it; it is the farm formerly owned by John Gray, Esq. For fur her particulars, apply at the New England Farmer office. March 14.

Scotch Gooseberry Bushes, Dahlia Roots, &c.

THIS Day received by J. B. Russell, at the New England Farmer Office and Seed Store, a choice collection of Large Scotch Gooseberry Bushes, Double Dahlia Roots, Tuberoses, Amarylles, &c. Particulars next week. March 14.

Golden Leaf Tobacco.

SINCE noticing Golden Leaf Tobacco for sale, in the papers, I have received orders for it from different parts of all the northern and eastern States and their principal cities. Many inquire the profits per acre. I have just received offers from Albany, which enable me to say that the produce of first rate crops is worth from 200 to $300 per acre, in that city. I have yet seed sufficient for 2000 acres, which, for my own and the public's benefit, I wish to dispose of on the terms in the former notice.

HIRAM MATTESON.

Matteson's Mills, Otsego Co. N. Y. March 1, 1832.

☞ A few packages of the above seed for sale by J. B. RUSSELL, Boston—$1 per package.

Printers inserting the above, by sending me a paper, Matteson's Mill, Exeter, Otsego Co. N. Y. shall receive seed for their kindness. March 14.

Stallions.

THE following Horses are for sale or to let, the ensuing season,—if not parted with, they will stand for Mares at the farm of A. Dey, at Lodi, Bergen Co. New Jersey, near Newark bridge, under the care of Hosea Worthington.

PATH KILLER—chesnut; five years old; sire, American Eclipse; dam, Hyacinth, a pure thorough bred mare of the English race breed, whose pedigree is verified up to the oriental horses, more than a hundred years; his colts are remarkable for their size and bone.

NAVARINO—blood-bay; four years old; sire, Sir Harry; dam, Hyacinth.

HARPINUS—beautiful blood-bay; upwards of sixteen hands high; sire, Hambletonian; dam, Messenger Mare; a great trotter, and his colts large and fine, well calculated for coach horses—for one pair of them, only 2 and 3 years old, $400 was refused.

The above horses will stand at $15, and the mare warranted with foal. If paid by the 1st of November, 1832, $12,50 will be taken.

JERRY LEGHORN—cream color; sixteen hands high; five years old; sire, imported horse Leghorn; dam, a Defiance Mare. This breed of horses has proved great travellers, and valuable as roadsters and for farming horses. Stands at $8, and the mare warranted with foal—if paid by the 1st of November, 1832, $6 will be taken.

Bulls.

TWO Bulls of the imported short horned Durham breed for sale, or to let the ensuing season. Enquire of A. Dey, No. 27, Nassau street, New York.

March 14, 1832. 3t

Evergreens, Silver Firs, etc.

THE subscriber being engaged in the Seed business, would be happy to receive orders for Forest Trees, Seeds and Evergreens from Maine, and being agent for J. B. Russell, Boston, and Prince & Sons, Flushing, N. Y. orders sent through them or otherwise, will be attended to without delay. Particular directions for taking up and packing is requested. WM. MANN.

Augusta, Me. March 14. 6t

A list of Mr Mann's prices for Evergreens, &c, can be seen at the New England Farmer office.

Farm for Sale or to Let.

WILL be sold or let, and possession given immediately, the Waterhill Farm, (so called,) situated in Lynn, consisting of between 70 and 80 acres of as good Land as can be found in the County of Essex, with between 2 and 300 large Apple, Pear, and Peach Trees, two good Dwelling Houses, with ample Barns and out-buildings. Said Farm is most pleasantly located, between the Boston old road and turnpike, and only ten minutes' walk from the Hotel, affording an excellent opportunity for a Milk Farm or a Gardener.

For further particulars inquire of Mr Wiley, near the Lynn Hotel, or of the subscriber.

WM. B. BREED.

Lynn, Feb 16, 1832. tf

Bees for Sale.

FOR Sale by Emerson Wheeler, Brighton, about a dozen Swarms of Bees in Beard's Patent Hives, from $8 to 15 each, including the hives.

March 14. 4t*

Farm to Let

A first rate farm of about 120 acres, well proportioned in mowing, tillage and pasturing. It is capable of maintaining 30 head of cattle, and is well calculated for a Milk Farm, for which purpose it has been used a number of years. There is also one of the best orchards in the State—a good dwelling house, and three good barns. For terms apply at 56, Commercial st. 4t* March 14

Valuable Farm for Sale.

THAT valuable Farm, pleasantly situated in the North Parish of Andover, one mile from the Rev. Mr Loring's meeting-house and Mr Putnam's academy, on the road leading from said meeting-house to Andover bridge, and within half a mile of good Saw and Grist Mills, and Blacksmith's Shop—3 miles from the Theological Seminary, 4 miles from Methuen meeting-house and factories, and 12 miles from Lowell—all which places, together with a number of Factories in the vicinity, afford as good a market for produce as may be found in Boston.

There is on said Farm rising 300 Fruit Trees, half of which are young, thrifty and grafted with the best kind of winter apples, and fall and summer pears—the residue furnishes a plentiful crop of fall and cider apples. The farm consists of 110 acres, more or less, of excellent land, conveniently divided into lots of tillage, mowing, pasture, rye-land and meadow, and well watered. The road passes through the centre of the farm, and is fenced on both sides with firm stone wall, most of the Farm being fenced with the same material. The buildings are convenient and in good repair—the house is nearly new.

The whole offers a desirable residence for a farmer, or a summer retreat for a gentleman who wishes to retire in that season of the year.

Purchasers are invited to call and view the premises. The terms will be made known by the occupant,

JOHN ENDICOTT,
OR DR J. KITTREDGE.

The above Farm, if not sold before the 25th inst. will be offered at Public Auction on Tuesday, the 27th inst. at 12 o'clock.

Andover, (North Parish) March 6, 1832. 3t*

To Let.

THE Farm on which the subscriber resides in Dracutt, within about three miles of the Lowell market, containing about three hundred acres of cultivated land of various descriptions, and all fenced with a stone wall. The buildings are a good dwelling house, shed, cider mill, three barns 174 feet long, grain and ice house, and are all in perfect repair. The farm is productive, and will summer and winter 50 cows, and offers the best encouragement for carrying on the milk and vegetable business at Lowell. It will be let from one to five years, with the stock and tools, and immediate possession given.

B. F. VARNUM.

March 2, 1832. 4t*

A Farm for Sale.

ONE of the best Farms in West Newbury, pleasantly situated near the Merrimack river, on the stage road from Newburyport to Haverhill and Lowell, containing about one hundred and fifteen acres, well divided into Mowing, Pasturing and Tillage. An excellent Farm for Hay, having a large proportion of natural Mowing, and a fine young Orchard. The Farm is composed of three separate lots, and will be sold together or in lots to suit the purchaser. There is on the north side of the road about sixty-six acres, with a large two story House, a Barn, 104 feet by 30, Granary, Chaise-House, Sheds, &c. convenient, and all in good repair. One lot on the south side of the road, opposite the House, containing eighteen acres.

Also, another Lot on the same side of the road, about 40 rods distant, containing about thirty acres, having a good barn on the same, 51 by 28.

Also, a Lot of SALT MARSH, about ten acres, very handy to boat, and of the first quality.

If said Farm is not disposed of at private sale, before Monday the 26th March next, it will be sold on the Wednesday following, at Public Auction, together with the Stock of Cattle, Farming Utensils, about fifty Tons of English Hay, 20 Tons Salt Hay, 60 bushels of Red Top Seed, lot of Potatoes, and sundry other articles.

Sale will be positive. For further particulars inquire of the subscriber on the premises, or at No. 12 Essex street, Boston.

PAUL BAYLEY.

West Newbury, Feb. 20, 1832.

Buckthorns.

Gentlemen in want of this valuable plant for live fences, can have young quicks about 3½ feet high, for $3 per hundred, and plants 2½ feet high, for $2,50 per hundred, by leaving their orders at the office of the New England Farmer. They are raised in the vicinity of Boston, are in the very finest order, and will be well packed. A small charge will be added for freight.

March 14.

MISCELLANY.

From the Hampshire Gazette.

GOING TO LAW.

It is strange that men, especially farmers, do not all see the folly of going to law to settle disputes between neighbors. The following article, from the Keene Sentinel, exhibits the foolishness of those who engage in lawsuits to adjust their difficulties, or rather to gratify their passions. A quarrel about three sheep, cost the plaintiff 400 dollars and the defendant 100 dollars, and they were finally necessitated to submit the cause to the decision of five persons in the neighborhood. They might have done this at first with little or no expense.

Beauties of Litigation.—A. sued his neighbor B. (both living in this county) for trespass, in taking three sheep from an inclosure, where a certain number belonging to the defendant, had been pastured through the summer. A. alleging that, to make up his number, B. had got part of his that had been pastured in an adjoining lot, and got mixed with a large flock belonging to different persons. The Justice gave judgment for the plaintiff. Defendant appealed to the Court of Common Pleas. The parties appeared with many witnesses at the January term, which was adjourned on account of the non-attendance, by reason of indisposition, of the majority of the Court. At the adjournment the case was argued, but the jury could not agree. The parties were then persuaded to submit the cause to the arbitration of five respectable individuals in the vicinity. The trial lasted three days, when the defendant obtained a verdict. The cost of this suit for the three sheep, we are told, amounts to nearly $500—about 400 of which falls on the plaintiff.

A schoolmaster in Hampshire County, offered himself for examination, only three months ago, possessing the following rare qualifications:

1. He used very pure language. When told by the committee, that they should examine him in English Grammar, he said, "I am glad of that, for *I am a horse* at Grammar."

2. He not only used pure language, but was very accurate in his statements. When asked to bound the United States, he said, "they are bounded east by the ocean, and south by Florida, and west by the valley of the Mississippi." When told that the valley was part of the United States, he said, "I don't know, there is a *darn'd great chunk* of it off there."

His language and manners were in keeping with each other. In all the studies except geography, he was well qualified, but was rejected because he was a clown in language and manners. The committee thought the school might as well be without a teacher, as to have one who would set such an example.—*Hampden Gazette.*

Cultivation of the Mulberry tree.—We are glad to perceive that this important subject is likely to be taken into consideration by our Legislature, and that a bill was introduced into the Assembly on Friday last, by Mr Van Schaick of this city, to encourage the growth of the mulberry tree and silk worm in this State. This is a subject of great importance to the country, and is destined to add another branch to our great and growing system.

New York Advocate.

LABOR.

The value of labor.—A pound of iron in a crude state, is perhaps worth a cent. It is converted, we will suppose, into steel, and then into watch springs. Now, according to a calculation made in a work upon this subject, there are 7000 grains in a pound weight, and every watch spring weighs a tenth of a grain,—70,000 watch springs, worth, say, $2 each, $140,000 for the pound of iron, or rather the labor expended upon it.

Economy of labor.—The steam engines at work in England are equal to the united force of 1,900,000 men, and are managed by only 36,000 men.

Price of labor.—This depends upon principles which seem to defy the researches of the most scientific, the most philosophical minds. It cannot be declared by the quantity of *coin*, earned by a laboring man, since coin is only metal, with its weight and purity determined by the mint. The value is determined by the same principles that determine the value of other things.

Baltimore and Ohio Railroad.—A correspondent at Baltimore, makes the following statement in regard to the railroad.

"A stranger would be surprised to witness the operations on our railroad, and see the amount of business transacted on the sixty miles already completed. More than 350 cars or wagons are now in operation, and this number is insufficient for the demand for transportation. The road is now completed into the heart of the city. During the first 16 days of this month, (February) there arrived and departed 1,733 wagons, loaded inward with flour, produce, &c, outward with merchandise. During the 16 days there arrived in the passenger cars 1,723 passengers. Among the articles which arrived on the cars during the 16 days alluded to, there were 14,288 bbls. flour, 61 tons iron, 490 tons wood, 195 tons granite, 900 bushels grain.

"Neither snow nor frost has obstructed the cars an hour this winter. The work progresses with great rapidity, and those who are acquainted with the country, believe it will be completed to the Ohio river within *five* years from this time."

Alpine Farmers.—The farmers of the Upper Alps, though by no means wealthy, live like lords in their houses; while the heaviest portion of the labor which is performed, devolves upon the wife. It is no uncommon thing to see a woman yoked to a plough with an ass, while the husband guides it. He accounts it an act of politeness to lend his wife to his neighbor who is oppressed with work, and the neighbor reciprocates the favor when needed.

Nasturtium.—The blossoms of this plant have been observed to emit electric sparks towards evening, which was first noticed by the daughter of the illustrious Linnæus, who could not credit the account until be had seen the phenomenon. It is seen most distinctly with the eye partly closed.

Retaliation.—When the late Marquis of Londonderry was Secretary of State, a friend one day, in familiar conversation, took the liberty of asking him why, in his official appointments, he did not promote merit? "Why," cried the Marquis, "why, because merit did not promote me, to be sure."—*London paper.*

The Horticultural Garden of the late Andrew Parmentier, is offered for Sale.

THE reputation of this establishment is not confined to the vicinity of New York, but is well known throughout the United States, and different parts of Europe. It is situated two miles from the city of New York, at Brooklyn, Long Island, at the junction of the Jamaica and Flatbush Roads, and contains 24 acres.

The Grounds are in a very high state of cultivation, and laid out with judgment and taste. The situation is very healthy and the view very extensive, commanding the bay, the city, &c. The Garden is enclosed by a pointed stone fence, and inside of that is a hawthorn hedge. The Nursery contains a fine and extensive collection of Fruit, Forest, and Ornamental Trees; also, a splendid collection of Roses and Herbaceous Plants,—the object of the late proprietor having always been to collect every new variety.

On the premises are a Dwelling House, two Laborers' Houses, seven Cisterns, and a never-failing Pump of excellent water; four Green and Hot Houses, containing a rich variety of rare exotics.

The advantages to be derived by any person who wishes to engage in the occupation of Gardening, by the purchase of this property, are very great; the business already secured is very extensive, and the prospect of increased encouragement is such as to warrant the belief that the purchase of the property will amply repay the enterprise of the one who may engage in the business.

Terms will be made known by applying to Mrs PARMENTIER, on the premises.

N. B.—Any orders sent to Mrs P. will be promptly and carefully executed. 6t

Feb. 16.

Flooring Boards, &c.

OF hard Southern Pine, or Eastern White Pine, furnished to order, ready planed (by steam power) and tongued or grooved, of any required dimensions. Quality good, and price lower than they can be elsewhere had.

Apply to E. COPELAND, Jr, 65, Broad street.

Ammunition.

OF the *best* quality and *lowest prices*, for sporting—constantly for sale at COPELAND'S POWDER STORE, 65 Broad Street.

N. B. If the quality is not found satisfactory, it may be returned, and the money will be refunded. Jan. 1

White Mulberry Trees.

WANTED, a few thousands of White Mulberry Trees, two or three years old. Any persons having them are requested to forward the necessary information, with the prices, to the New-England Farmer Office, post paid.

Fresh White Mulberry Seed.

JUST received at J. B. Russell's Seed Store, Nos. 51 & 52 North Market Street—

A small supply of fresh and genuine White Mulberry Seed, warranted the growth of the past season, from one of the greatest Mulberry orchards in Mansfield, Connecticut. Short directions for its culture accompany the seed.

Published every Wednesday Evening, at $3 per annum, payable at the end of the year—but those who pay within sixty days from the time of subscribing, are entitled to a deduction of fifty cents.

☞ No paper will be sent to a distance without payment being made in advance.

Printed for J. B. RUSSELL, by I. R. BUTTS—by whom all descriptions of Printing can be executed to meet the wishes of customers. Orders for Printing received by J. B. RUSSELL, at the Agricultural Warehouse, No. 52, North Market Street.

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New York—G. THORBURN & SONS, 67 Liberty-street.
Albany—WM. THORBURN, 347 Market street.
Philadelphia—D. & C. LANDRETH, 85 Chestnut-street.
Baltimore—G. B. SMITH, Editor of the American Farmer.
Cincinnati—S. C. PARKHURST, 23 Lower Market-street.
Flushing, N. Y. WM. PRINCE & SONS, Prop. Lin. Bot. Garden
Middlebury, Vt.—WIGHT CHAPMAN.
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